Tune-Up Tuesday for October 24, 2017

*x*[*n*]

The sinc pulse is commonly used in interpolation:

We sample the sinc pulse to create (plot on right)

*n*

f0 = 50;

fs = 400;

fnorm = 2\*f0/fs;

nmax = 20;

n = -nmax : nmax;

x = sinc(fnorm\*n);

stem(n, x);

Define *x*[*n*] on the right and evaluate freqz(x):

1. Lowpass, highpass, bandpass, bandstop, allpass?
2. What is the bandwidth in discrete-time frequency as a function of *f*0 and *f*s? Try different values of *f*0.

(c) Bandwidth in continuous-time frequency as a function of *f*0?

The command freqz(**x**) plots the magnitude and phase of the frequency response of a signal *x*[*n*].

% Code for above plot

stem(n, x);

hold on;

t = -nmax : 0.01 : nmax;

y = sinc(fnorm\*t);

plot(t, y);

hold off;